

10/512,133

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FILE 'CAPLUS' ENTERED AT 16:23:19 ON 18 DEC 2007

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*** YOU HAVE NEW MAIL ***

=> s dendrimer (4a) phosphorus

L1 117 DENDRIMER (4A) PHOSPHORUS

=> s l1 and solid support

L2 3 L1 AND SOLID SUPPORT

=> dup rem l2

PROCESSING COMPLETED FOR L2

L3 3 DUP REM L2 (0 DUPLICATES REMOVED)

=> d l3 bib abs 1-3

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:765903 CAPLUS

DN 145:329078

TI Magnetic bead-based solid phase for selective extraction of genomic DNA

AU Archer, Marie J.; Lin, Baochuan; Wang, Zheng; Stenger, David A.

CS Center for Biomolecular Science and Engineering, Naval Research
Laboratory, Washington, DC, 20375, USA

SO Analytical Biochemistry (2006), 355(2), 285-297

CODEN: ANBCA2; ISSN: 0003-2697

PB Elsevier

DT Journal

LA English

AB Magnetic bead-based solid phases are widely used for the separation of nucleic acids from complex mixts. The challenge to selectively sep. specific DNA mols. (via complementary hybridization) in a single step is the selection of a linker between the capture probe and the solid support that can be exposed to high temps. in the presence of a high salt media. This article presents a general platform for the fabrication of a magnetic bead-based selective solid phase that can be used for subtractive hybridization or sequence capture applications. Phosphorus dendrimers are used for the first time as linkers in a magnetic bead-based selective solid phase for capture of genomic DNA. Aside from providing a high loading capacity, they render a stable bond between the capture probe and the surface under the high temperature and salt conditions required for denaturation and capture to proceed in a single step. The thermal stability of the solid phase under these conditions is first

demonstrated by hybridizing a Cy3-labeled target. The selective capture of DNA targets in a single step is then demonstrated by subtractive hybridization of fragmented human genomic DNA. The specificity and selectivity of the solid phase are demonstrated by the recovery of adenovirus serotype 4 DNA spiked into the human DNA target. The effect of steric and electrostatic constraints was also investigated by using dendrimers of different generations that vary in their size and the number of branches. The results demonstrate that this platform can be used for single-step subtractive hybridization applications with better performance over the conventional two-step method using streptavidin-coated magnetic beads.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT.

L3 ANSWER 2 OF 3 USPATFULL on STN.

AN 2005:247572. USPATFULL

TI Solid supports functionalised with phosphorus dendrimers, method for preparing same and uses thereof

IN Trevisiol, Emmanuelle, Cornebarrieu, FRANCE

Leclaire, Julien, Toulouse, FRANCE

Pratviel, Genevieve, Toulouse, FRANCE

Caminade, Anne-Marie, Toulouse, FRANCE

Francois, Jean, Castenet, FRANCE

Majoral, Jean-Piere, Ramonville, FRANCE

Meunier, Bernard, Castenet, FRANCE

PI US 2005214767 A1 20050929

AI US 2003-512133 A1 20030417 (10)

WO 2003-FR1231 20030417

20050525 PCT 371 date

PRAI FR 2002-5049 20020423

DT Utility

FS APPLICATION

LREP ALSTON & BIRD LLP, BANK OF AMERICA PLAZA, 101 SOUTH TRYON STREET, SUITE
4000, CHARLOTTE, NC, 28280-4000, US

CLMN Number of Claims: 26

ECL Exemplary Claim: 1

DRWN 7 Drawing Page(s)

LN.CNT 1051

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to solid supports functionalized with phosphorus-containing dendrimers, to a process for preparing them, to their use for preparing biochips and to the uses of these biochips, in particular for immobilizing molecules of interest, especially biological molecules of interest such as nucleic acids, polypeptides, lipids and proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 3 OF 3 WPIDS COPYRIGHT 2007 THE THOMSON CORP on STN

AN 2003-856187 [80] WPIDS

DNC C2003-241678 [80]

TI Solid support carrying functionalized dendrimer,
useful for immobilization or synthesis of e.g. nucleic acids or proteins,
particularly as biochip for studying interactions

DC B04; D16

IN CAMINADE A; CAMINADE A M; FRANCOIS J; LECLAIRE J; MAJORAL J; MAJORAL J P;
MEUNIER B; PRATVIEL G; TREVISIOL E

PA (CAMI-I) CAMINADE A; (CNRS-C) CENT NAT RECH SCI; (CNRS-C) CNRS CENT NAT
RECH SCI; (FRAN-I) FRANCOIS J; (INRG-C) INRA INST NAT RECH AGRONOMIQUE;
(LECL-I) LECLAIRE J; (MAJO-I) MAJORAL J; (MEUN-I) MEUNIER B; (PRAT-I)
PRATVIEL G; (TREV-I) TREVISIOL E

CYC 102

PIA FR 2838737 A1 20031024 (200380)* FR 50[7]

WO 2003091304 A2 20031106 (200401) FR

AU 2003246839 A1 20031110 (200442) EN
 EP 1501842 A2 20050202 (200510) FR
 AU 2003246839 A8 20031110 (200559) EN
 US 20050214767 A1 20050929 (200564) EN
 ADT FR 2838737 A1 FR 2002-5049 20020423; AU 2003246839 A1 AU 2003-246839
 20030417; AU 2003246839 A8 AU 2003-246839 20030417; EP 1501842 A2 EP
 2003-747145 20030417; WO 2003091304 A2 WO 2003-FR1231 20030417; EP 1501842
 A2 WO 2003-FR1231 20030417; US 20050214767 A1 WO 2003-FR1231 20030417; US
 20050214767 A1 US 2005-512133 20050525
 FDT AU 2003246839 A1 Based on WO 2003091304 A; EP 1501842 A2 Based on WO
 2003091304 A; AU 2003246839 A8 Based on WO 2003091304 A
 PRAI FR 2002-5049 20020423
 AN 2003-856187 [80] WPIDS
 AB FR 2838737 A1 UPAB: 20060120

NOVELTY - Solid support (A) has at least one surface
 covalently functionalized by a phosphorus-containing
 dendrimer (B) that comprises:

(i) a central core, containing at least two functional groups; and
 (ii) at its periphery several functional groups that allow
 attachment, or in situ synthesis, of molecules of interest (C).

(B) has size 1-20 nm.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) preparing (A);
 (2) biochip or 'dendrichip' comprising (A) with (C) covalently
 attached to it; and
 (3) preparing the chips of (2).

USE - (A) are used for immobilization and/or in situ synthesis of
 nucleic acids, lipids, proteins and their molecular partners, especially
 for preparation of biochips, e.g. for performing nucleic acid
 hybridization, antigen/antibody or ligand/receptor binding assays.

ADVANTAGE - (A) can be stored for at least 2 months without
 alteration in the peripheral functional groups, and provide chips with
 very low background and which can be reused, without significant loss of
 signal or increase in background, so costs are reduced and statistically
 accurate data are produced. The biochip is produced in only a few stages,
 under controlled, reproducible and undemanding conditions. The multiple
 anchoring sites on the dendrimer ensure high stability.

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